

AMENDMENTS TO THE CLAIMS

Please amend the claims as shown in the claim listing below.

1-77. (Canceled).

78. (Currently amended) The method according to Claim [[125]] 162 wherein said metal-containing component is at least one selected from the group consisting of an alkali metal, an alkaline earth metal, and compounds thereof.

79. (Previously presented) The method according to Claim 78 wherein said alkali metal or alkaline earth metal is at least one selected from the group consisting of Li, Na, K, Rb, Cs, Be, Mg, Ca, Sr and Ba.

80. (Currently amended) The method according to Claim [[125]] 162 wherein said metal-containing component is at least one selected from the group consisting of Al, Ga, Tl, Pb, Bi and compounds thereof.

81. (Currently amended) The method according to Claim [[125]] 162 wherein said metal-containing component is at least one selected from the group consisting of Tl, Pb, Bi and compounds thereof.

82. (Currently amended) The method according to Claim [[125]] 162 wherein said metal-containing component is at least one selected from the group consisting of Cr, Ni, Mo, Tc, Re and compounds thereof.

83. (Currently amended) The method according to Claim [[125]] 162 wherein said metal-containing component is at least one selected from the group consisting of Cr, Ni and compounds thereof.

84. (Currently amended) The method according to Claim [[125]] 162 wherein said metal-containing component is at least one selected from the group consisting of Sc, Y, Zr, Hf, V and

compounds thereof.

85. (Currently amended) The method according to Claim [[125]] 162 wherein said metal-containing component is at least one selected from the group consisting of Ru, Rh, Pd, Os, Ir, Pt and compounds thereof.

86. (Currently amended) The method according to Claim [[125]] 162 wherein said metal-containing component is at least one selected from the group consisting of Ru, Pd and compounds thereof.

87. (Currently amended) The method according to Claim [[125]] 162 wherein said metal-containing component is at least one selected from the group consisting of Cu, Ag, Au, Cd, Hg and compounds thereof.

88. (Currently amended) The method according to Claim [[125]] 162 wherein said metal-containing component is at least one selected from the group consisting of lanthanide metals and compounds thereof.

89. (Currently amended) The method according to Claim [[125]] 162 wherein said metal-containing component is at least one selected from the group consisting of In and a compound thereof.

90. (Currently amended) The method according to Claim [[125]] 162 wherein said metal-containing component is at least one selected from the group consisting of Mn, Co, Zn and compounds thereof.

91. (Currently amended) The method according to Claim [[125]] 162 wherein said metal-containing component is at least one selected from the group consisting of Fe, Nb, Ta, W and compounds thereof.

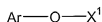
92. (Currently amended) The method according to Claim [[125]] 162 wherein said metal-

containing component is at least one selected from the group consisting of Fe and a compound thereof.

93. (Canceled)

94. (Currently amended) The method according to Claim [[125]] 162 wherein the at least one moiety represented by Formula 1 is at least one moiety represented by Formula 3:

(Formula 3)



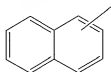
wherein Ar represents an aryl group, each of X^1 , X^2 and X^3 independently represents hydrogen, a hydrocarbyl group, an acyl group, a sulfonyl-containing group, a phosphoryl-containing group or an ether-group-containing hydrocarbyl group.

95. (Previously presented) The method according to Claim 94 wherein Ar is selected from the group consisting of moieties represented by Formulae 5 to 12:

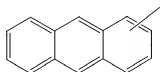
(Formula 5)



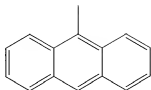
(Formula 6)



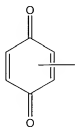
(Formula 7)



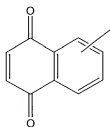
(Formula 8)



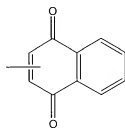
(Formula 9)



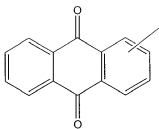
(Formula 10)



(Formula 11)

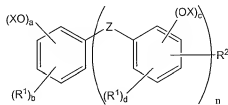


(Formula 12)



96. (Previously presented) The method according to Claim 94 wherein the compound containing the at least one moiety represented by said Formula 3 is a linear compound of Formula 13 and derivatives thereof:

(Formula 13)

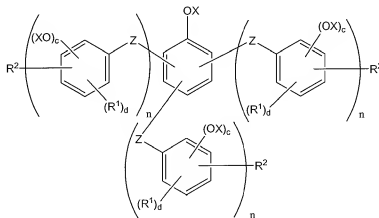


wherein each R^1 is the same or different and represents a C_1 - C_{20} hydrocarbyl group, a hydroxyl group- or halogen group-carrying C_1 - C_{20} hydrocarbyl group, a halogen group, a carboxyl group or its ester, a formyl group, an acyl group, a group represented by (acyl)-O-, an amino group, a mono- or dialkylamino group, an amide group or its substituted form, a hydroxyl group, an alkoxy group, an alkylthio group, a sulfonyl-containing group, a phosphoryl-containing group, a nitro group, a cyano group or a thiocyno group, each R^2 is the same or different and represents hydrogen, a C_1 - C_{20} hydrocarbyl group, a hydroxyl group- or halogen group-carrying C_1 - C_{20} hydrocarbyl group, a halogen group, a carboxyl group or its ester, a formyl group, an acyl group, a group represented by (acyl)-O-, an amino group, a mono- or dialkylamino group, an amide group or its substituted form, a hydroxyl group, an alkoxy group, an alkylthio group, a sulfonyl-containing group, a phosphoryl-containing group, a nitro group, a cyano group or a thiocyno group, each X is the same or different and represents hydrogen, a C_1 - C_{20} hydrocarbyl group, a hydroxyl group- or halogen group-carrying C_1 - C_{20} hydrocarbyl group, an acyl group, a sulfonyl-containing group, a phosphoryl-containing group or an ether-group-containing hydrocarbyl group, each Z is the same or different and represents a direct bond, a C_1 - C_{10} alkylene group,

-(alkylene)-O-, -(alkylene)-S-, -O-, -S-, -SO₂-, -CO- or -COO-, n represents an integer of 1 to 100, each of a and c is an integer of 1 to 3, each of b and d is 0 or an integer of 1 to 3, provided that $1 \leq a+b \leq 5$, $1 \leq c+d \leq 4$, and each d is the same or different, and derivatives thereof.

97. (Previously presented) The method according to Claim 94 wherein the compound containing the at least one moiety represented by said Formula 3 is a branched linear compound represented by Formula 15 and derivatives thereof:

(Formula 15)

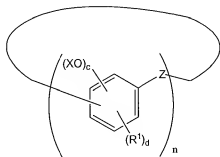


wherein each R¹ is the same or different and represents a C₁-C₂₀ hydrocarbyl group, a hydroxyl group- or halogen group-carrying C₁-C₂₀ hydrocarbyl group, a halogen group, a carboxyl group or its ester, a formyl group, an acyl group, a group represented by (acyl)-O-, an amino group, a mono- or dialkylamino group, an amide group or its substituted form, a hydroxyl group, an alkoxyl group, an alkylthio group, a sulfonyl-containing group, a phosphoryl-containing group, a nitro group, a cyano group or a thiocyno group, each R² is the same or different and represents hydrogen, a C₁-C₂₀ hydrocarbyl group, a hydroxyl group- or halogen group-carrying C₁-C₂₀ hydrocarbyl group, a halogen group, a carboxyl group or its ester, a formyl group, an acyl group, a group represented by (acyl)-O-, an amino group, a mono- or dialkylamino group, an amide group or its substituted form, a hydroxyl group, an alkoxyl group, an alkylthio group, a sulfonyl-containing group, a phosphoryl-containing group, a nitro group, a cyano group or a thiocyno group, each X is the same or different and represents hydrogen, a C₁-C₂₀ hydrocarbyl group, a

hydroxyl group- or halogen group-carrying C_1 - C_{20} hydrocarbyl group, an acyl group, a sulfonyl-containing group, a phosphoryl-containing group or an ether-group-containing hydrocarbyl group, each Z is the same or different and represents a direct bond, a C_1 - C_{10} alkylene group, - (alkylene)-O-, -(alkylene) S-, -O-, -S-, -SO₂-, -CO- or -COO-, each n is the same or different and represents an integer of 1 to 100, each c is the same or different and represents an integer of 1 to 3, each d is the same or different and represents 0 or an integer of 1 to 3, provided that $1 \leq c+d \leq 4$, and derivatives thereof.

98. (Previously presented) The method according to Claim 94 wherein the compound containing the at least one moiety represented by said Formula 3 is a cyclic compound represented by Formula 17 and derivatives thereof:

(Formula 17)

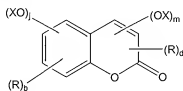


wherein each R^1 is the same or different and represents a C_1 - C_{20} hydrocarbyl group, a hydroxyl group- or halogen group-carrying C_1 - C_{20} hydrocarbyl group, a halogen group, a carboxyl group or its ester, a formyl group, an acyl group, a group represented by (acyl)-O-, an amino group, a mono- or dialkylamino group, an amide group or its substituted form, a hydroxyl group, an alkoxy group, an alkylthio group, a sulfonyl-containing group, a phosphoryl-containing group, a nitro group, a cyano group or a thiocyno group, each X is the same or different and represents hydrogen, a C_1 - C_{20} hydrocarbyl group, a hydroxyl group- or halogen group-carrying C_1 - C_{20} hydrocarbyl group, an acyl group, a sulfonyl-containing group, a phosphoryl-containing group or an ether-group-containing hydrocarbyl group, each Z is the same or different and represents a direct bond, a C_1 - C_{10} alkylene group, -(alkylene)-O-, -(alkylene)-S-, -O-, -S-, -SO₂-, -CO- or -COO-, n represents an integer of 1 to 100, c represents an integer of 1 to 3, d represents 0 or an

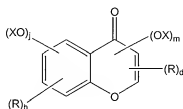
integer of 1 to 3, provided that $1 \leq c+d \leq 4$, and each d is the same or different, and derivatives thereof.

99. (Previously presented) The method according to Claim 94 wherein the compound containing the at least one moiety represented by said Formula 3 is a compound selected from the group consisting of a coumarine derivative represented by Formula 19 and a chromone derivative represented by Formula 21:

(Formula 19)



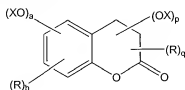
(Formula 21)



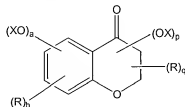
wherein each R is the same or different and represents a C_1 - C_{20} hydrocarbyl group, a hydroxyl group- or halogen group-carrying C_1 - C_{20} hydrocarbyl group, a halogen group, a carboxyl group or its ester, a formyl group, an acyl group, a group represented by (acyl)-O-, an amino group, a mono- or dialkylamino group, an amide group or its substituted form, a hydroxyl group, an alkoxy group, an alkylthio group, a sulfonyl-containing group, a phosphoryl-containing group, a nitro group, a cyano group or a thiocyno group, each X is the same or different and represents hydrogen, a C_1 - C_{20} hydrocarbyl group, a hydroxyl group- or halogen group-carrying C_1 - C_{20} hydrocarbyl group, an acyl group, a sulfonyl-containing group, a phosphoryl-containing group or an ether-group-containing hydrocarbyl group, each of j and b is 0 or an integer of 1 to 3, each of m and d is 0 or an integer of 1 to 2, provided that $0 \leq j+b \leq 4$, $0 \leq m+d \leq 2$ and $1 \leq j+m \leq 5$, and derivatives thereof.

100. (Previously presented) The method according to Claim 94 wherein the compound containing the at least one moiety represented by said Formula 3 is a compound selected from the group consisting of a dihydrocoumarine derivative represented by Formula 23, a chromanone derivative represented by Formula 25, and an isochromanone derivative represented by Formula 27:

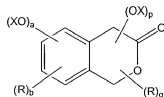
(Formula 23)



(Formula 25)



(Formula 27)

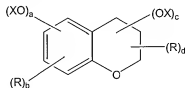


wherein each R is the same or different and represents a C₁-C₂₀ hydrocarbyl group, a hydroxyl group- or halogen group-carrying C₁-C₂₀ hydrocarbyl group, a halogen group, a carboxyl group or its ester, a formyl group, an acyl group, a group represented by (acyl)-O-, an amino group, a mono- or dialkylamino group, an amide group or its substituted form, a hydroxyl group, an alkoxyl group, an alkylthio group, a sulfonyl-containing group, a phosphoryl-containing group, a nitro group, a cyano group or a thiocyanate group, each X is the same or different and represents hydrogen, a C₁-C₂₀ hydrocarbyl group, a hydroxyl group- or halogen group-carrying C₁-C₂₀ hydrocarbyl group, an acyl group, a sulfonyl-containing group, a phosphoryl-containing group or an ether-group-containing hydrocarbyl group, a is an integer of 1 to 3, b is 0 or an integer of 1 to

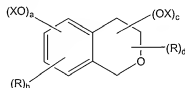
3, and each of p and q is 0 or an integer of 1 to 2, provided that $1 \leq a+b \leq 4$ and $0 \leq p+q \leq 2$, and derivatives thereof.

101. (Previously presented) The method according to Claim 94 wherein the compound containing the at least one moiety represented by said Formula 3 is a compound selected from the group consisting of a chroman derivative represented by Formula 29 and an isochroman derivative represented by Formula 31:

(Formula 29)



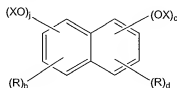
(Formula 31)



wherein each R is the same or different and represents a C₁-C₂₀ hydrocarbyl group, a hydroxyl group- or halogen group-carrying C₁-C₂₀ hydrocarbyl group, a halogen group, a carboxyl group or its ester, a formyl group, an acyl group, a group represented by (acyl)-O-, an amino group, a mono- or dialkylamino group, an amide group or its substituted form, a hydroxyl group, an alkoxyl group, an alkylthio group, a sulfonyl-containing group, a phosphoryl-containing group, a nitro group, a cyano group or a thiocyno group, each X is the same or different and represents hydrogen, a C₁-C₂₀ hydrocarbyl group, a hydroxyl group- or halogen group-carrying C₁-C₂₀ hydrocarbyl group, an acyl group, a sulfonyl-containing group, a phosphoryl-containing group or an ether-group-containing hydrocarbyl group, a is an integer of 1 to 3, b is 0 or an integer of 1 to 3, each of c and d is 0 or an integer of 1 to 3, provided that $1 \leq a+b \leq 4$ and $0 \leq c+d \leq 3$, and derivatives thereof.

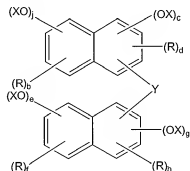
102. (Previously presented) The method according to Claim 94 wherein the compound containing the at least one moiety represented by said Formula 3 is a compound selected from the group consisting of a naphthalene derivative represented by Formula 33 and a bisnaphthyl derivative represented by Formula 35:

(Formula 33)



wherein each R is the same or different and represents a C_1 - C_{20} hydrocarbyl group, a hydroxyl group- or halogen group-carrying C_1 - C_{20} hydrocarbyl group, a halogen group, a carboxyl group or its ester, a formyl group, an acyl group, a group represented by (acyl)-O-, an amino group, a mono- or dialkylamino group, an amide group or its substituted form, a hydroxyl group, an alkoxyl group, an alkylthio group, a sulfonyl-containing group, a phosphoryl-containing group, a nitro group, a cyano group or a thiocyno group, each X is the same or different and represents hydrogen, a C_1 - C_{20} hydrocarbyl group, a hydroxyl group- or halogen group-carrying C_1 - C_{20} hydrocarbyl group, an acyl group, a sulfonyl-containing group, a phosphoryl-containing group or an ether-group-containing hydrocarbyl group, each of j, b, c and d is 0 or an integer of 1 to 3, provided that $0 \leq j+b \leq 4$, $0 \leq c+d \leq 4$ and $1 \leq j+c \leq 6$,

(Formula 35)

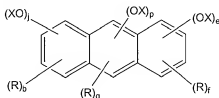


wherein each R is the same or different and represents a C_1 - C_{20} hydrocarbyl group, a hydroxyl group- or halogen group-carrying C_1 - C_{20} hydrocarbyl group, a halogen group, a carboxyl group

or its ester, a formyl group, an acyl group, a group represented by (acyl)-O-, an amino group, a mono- or dialkylamino group, an amide group or its substituted form, a hydroxyl group, an alkoxy group, an alkylthio group, a sulfonyl-containing group, a phosphoryl-containing group, a nitro group, a cyano group or a thiocyno group, each X is the same or different and represents hydrogen, a C₁-C₂₀ hydrocarbly group, a hydroxyl group- or halogen group-carrying C₁-C₂₀ hydrocarbly group, an acyl group, a sulfonyl-containing group, a phosphoryl-containing group or an ether-group-containing hydrocarbly group, Z represents a direct bond, a C₁-C₁₀ alkylene group, -(alkylene)-O-, -(alkylene)-S-, -O-, -S-, -SO₂-, -CO- or -COO-, each of j, b, c, d, e, f, g and h is 0 or an integer of 1 to 3, provided that $0 \leq j+b \leq 4$, $0 \leq c+d \leq 3$, $0 \leq e+f \leq 4$, $0 \leq g+h \leq 3$ and $1 \leq j+c+e+g \leq 12$, and derivatives thereof.

103. (Previously presented) The method according to Claim 94 wherein the compound containing the at least one moiety represented by said Formula 3 is an anthracene derivative represented by Formula 37:

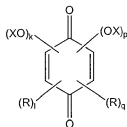
(Formula 37)



wherein each R is the same or different and represents a C₁-C₂₀ hydrocarbly group, a hydroxyl group- or halogen group-carrying C₁-C₂₀ hydrocarbly group, a halogen group, a carboxyl group or its ester, a formyl group, an acyl group, a group represented by (acyl)-O-, an amino group, a mono- or dialkylamino group, an amide group or its substituted form, a hydroxyl group, an alkoxy group, an alkylthio group, a sulfonyl-containing group, a phosphoryl-containing group, a nitro group, a cyano group or a thiocyno group, each X is the same or different and represents hydrogen, a C₁-C₂₀ hydrocarbly group, a hydroxyl group- or halogen group-carrying C₁-C₂₀ hydrocarbly group, an acyl group, a sulfonyl-containing group, a phosphoryl-containing group or an ether-group-containing hydrocarbly group, each of j, b, e and f is 0 or an integer of 1 to 3, each of p and q is 0 or an integer of 1 to 2, provided that $0 \leq j+b \leq 4$, $0 \leq p+q \leq 2$, $0 \leq e+f \leq 4$ and $1 \leq j+p+e \leq 8$.

104. (Previously presented) The method according to Claim 94 wherein the compound containing the at least one moiety represented by said Formula 3 is a benzoquinone derivative represented by Formula 39:

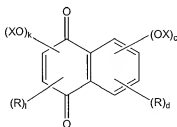
(Formula 39)



wherein each R is the same or different and represents a C₁-C₂₀ hydrocarbyl group, a hydroxyl group- or halogen group-carrying C₁-C₂₀ hydrocarbyl group, a halogen group, a carboxyl group or its ester, a formyl group, an acyl group, a group represented by (acyl)-O-, an amino group, a mono- or dialkylamino group, an amide group or its substituted form, a hydroxyl group, an alkoxy group, an alkylthio group, a sulfonyl-containing group, a phosphoryl-containing group, a nitro group, a cyano group or a thiocyanate group, each X is the same or different and represents hydrogen, a C₁-C₂₀ hydrocarbyl group, a hydroxyl group- or halogen group-carrying C₁-C₂₀ hydrocarbyl group, an acyl group, a sulfonyl-containing group, a phosphoryl-containing group or an ether-group-containing hydrocarbyl group, each of k, l, p and q is 0 or an integer of 1 to 2, provided that $0 \leq k+l \leq 2$, $0 \leq p+q \leq 2$ and $1 \leq k+p \leq 4$.

105. (Previously presented) The method according to Claim 94 wherein the compound containing the at least one moiety represented by said Formula 3 is a naphthoquinone derivative represented by Formula 41:

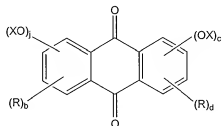
(Formula 41)



wherein each R is the same or different and represents a C₁-C₂₀ hydrocarbyl group, a hydroxyl group- or halogen group-carrying C₁-C₂₀ hydrocarbyl group, a halogen group, a carboxyl group or its ester, a formyl group, an acyl group, a group represented by (acyl)-O-, an amino group, a mono- or dialkylamino group, an amide group or its substituted form, a hydroxyl group, an alkoxyl group, an alkylthio group, a sulfonyl-containing group, a phosphoryl-containing group, a nitro group, a cyano group or a thiocyno group, each X is the same or different and represents hydrogen, a C₁-C₂₀ hydrocarbyl group, a hydroxyl group- or halogen group-carrying C₁-C₂₀ hydrocarbyl group, an acyl group, a sulfonyl-containing group, a phosphoryl-containing group or an ether-group-containing hydrocarbyl group, each of k and l is 0 or an integer of 1 to 2, each of c and d is 0 or an integer of 1 to 3, provided that $0 \leq k+l \leq 2$, $0 \leq c+d \leq 4$ and $1 \leq k+c \leq 5$.

106. (Previously presented) The method according to Claim 94 wherein the compound containing the at least one moiety represented by said Formula 3 is an anthraquinone derivative represented by Formula 43:

(Formula 43)

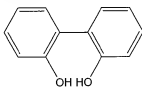


wherein each R is the same or different and represents a C₁-C₂₀ hydrocarbyl group, a hydroxyl group- or halogen group-carrying C₁-C₂₀ hydrocarbyl group, a halogen group, a carboxyl group or its ester, a formyl group, an acyl group, a group represented by (acyl)-O-, an amino group, a mono- or dialkylamino group, an amide group or its substituted form, a hydroxyl group, an alkoxyl group, an alkylthio group, a sulfonyl-containing group, a phosphoryl-containing group, a nitro group, a cyano group or a thiocyno group, each X is the same or different and represents hydrogen, a C₁-C₂₀ hydrocarbyl group, a hydroxyl group- or halogen group-carrying C₁-C₂₀ hydrocarbyl group, an acyl group, a sulfonyl-containing group, a phosphoryl-containing group or

an ether-group-containing hydrocarbonyl group, each of j, b, c and d is 0 or an integer of 1 to 3, provided that $0 \leq j+b \leq 4$, $0 \leq c+d \leq 4$ and $1 \leq j+c \leq 6$.

107. (Previously presented) The method according to Claim 94 wherein the compound containing the at least one moiety represented by said Formula 3 is 2,2'-bisphenol represented by Formula 45:

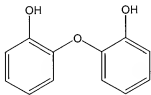
(Formula 45)



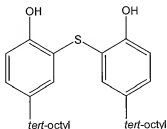
and derivatives thereof.

108. (Previously presented) The method according to Claim 94 wherein the compound containing the at least one moiety represented by said Formula 3 is a compound selected from the group consisting of 2,2'-dihydroxydiphenylether represented by Formula 47, 2,2'-thiobis(4-*t*-octylphenol) represented by Formula 48 and 2,2'-methylenebis(6-*t*-butyl-*p*-cresol) represented by Formula 49:

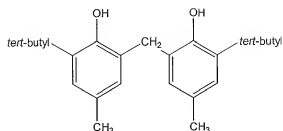
(Formula 47)



(Formula 48)



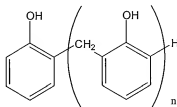
(Formula 49)



and derivatives thereof.

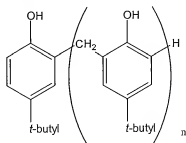
109. (Previously presented) The method according to Claim 94 wherein the compound containing the at least one moiety represented by said Formula 3 is a compound selected from the group consisting of a methylene-bridged linear phenol compound represented by Formula 50 (mixture of dimer to 100-mer) and a methylene-bridged linear p-t-butylphenol compound represented by Formula 51 (mixture of dimer to 100-mer):

(Formula 50)



wherein n is an integer of 1 to 99,

(Formula 51)

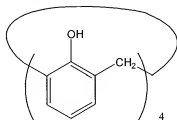


wherein n is an integer of 1 to 99, and derivatives thereof.

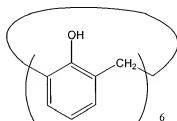
110. (Previously presented) The method according to Claim 94 wherein the compound containing the at least one moiety represented by said Formula 3 is a compound selected from the group consisting of Calix [4] arene represented by Formula 52, Calix [6] arene represented

by Formula 53, Calix [8] arene represented by Formula 54, p-t-butyl Calix [4] arene represented by Formula 55, p-t-butyl Calix [6] arene represented by Formula 56 and p-t-butyl Calix [8] arene represented by Formula 57:

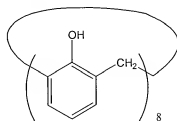
(Formula 52)



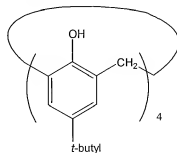
(Formula 53)



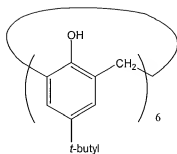
(Formula 54)



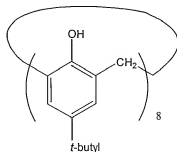
(Formula 55)



(Formula 56)



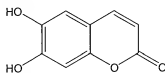
(Formula 57)



and derivatives thereof.

111. (Previously presented) The method according to Claim 94 wherein the compound containing the at least one moiety represented by said Formula 3 is esculetin represented by Formula 58:

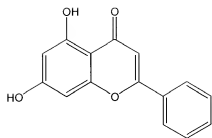
(Formula 58)



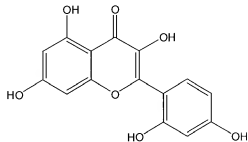
and derivatives thereof.

112. (Previously presented) The method according to Claim 94 wherein the compound containing the at least one moiety represented by said Formula 3 is a compound selected from the group consisting of chrysin represented by Formula 60 and morin represented by Formula 61:

(Formula 60)



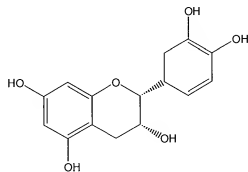
(Formula 61)



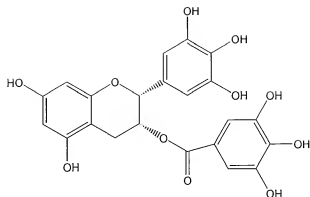
and derivatives thereof.

113. (Previously presented) The method according to Claim 94 wherein the compound containing the at least one moiety represented by said Formula 3 is a compound selected from the group consisting of epicatechin represented by Formula 63 and epigallocatechin gallate represented by Formula 64:

(Formula 63)



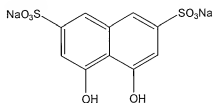
(Formula 64)



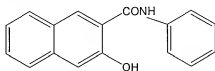
and derivatives thereof.

114. (Previously presented) The method according to Claim 94 wherein the compound containing the at least one moiety represented by said Formula 3 is a compound selected from the group consisting of disodium 4,5-dihydroxynaphthalene-2,7-disulfonate represented by Formula 65, naphthol AS represented by Formula 67, and 1,1'-bi-2-naphthol represented by Formula 68:

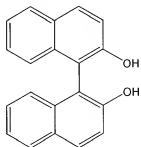
(Formula 65)



(Formula 67)



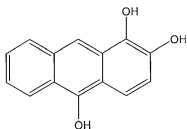
(Formula 68)



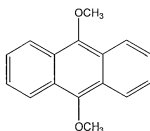
and derivatives thereof.

115. (Previously presented) The method according to Claim 94 wherein the compound containing the at least one moiety represented by said Formula 3 is a compound selected from the group consisting of anthrarobin represented by Formula 70 and 9,10-dimethoxyanthracene represented by Formula 71:

(Formula 70)



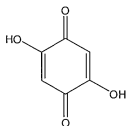
(Formula 71)



and derivatives thereof.

116. (Previously presented) The method according to Claim 94 wherein the compound containing the at least one moiety represented by said Formula 3 is 2,5-dihydroxybenzoquinone represented by Formula 73:

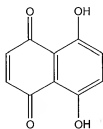
(Formula 73)



and derivatives thereof.

117. (Previously presented) The method according to Claim 94 wherein the compound containing the at least one moiety represented by said Formula 3 is 5,8-dihydroxy-1,4-naphthoquinone represented by Formula 74:

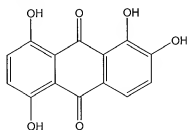
(Formula 74)



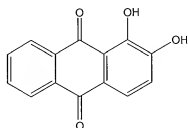
and derivatives thereof.

118. (Previously presented) The method according to Claim 94 wherein the compound containing the at least one moiety represented by said Formula 3 is a compound selected from the group consisting of quinalizarin represented by Formula 76, alizarin represented by Formula 77, quinizarin represented by Formula 78, anthrarufin represented by Formula 79, emodine represented by Formula 80, and 1,8-diamino-4,5-dihydroxyanthraquinone represented by Formula 82:

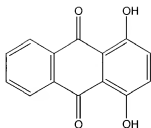
(Formula 76)



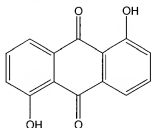
(Formula 77)



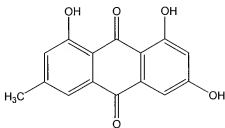
(Formula 78)



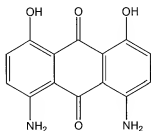
(Formula 79)



(Formula 80)



(Formula 82)



and derivatives thereof.

119-124. (Canceled)

125. (Canceled)

126. (Canceled)

127. (Currently amended) The method according to Claim ~~[[126]]~~ 163 wherein said metal-

containing component is at least one selected from the group consisting of an alkali metal, an alkaline earth metal, and compounds thereof.

128. (Previously presented) The method according to Claim 127 wherein said alkali metal or alkaline earth metal is at least one selected from the group consisting of Li, Na, K, Rb, Cs, Be, Mg, Ca, Sr and Ba.

129. (Currently amended) The method according to Claim [[126]] 163 wherein said metal-containing component is at least one selected from the group consisting of Al, Ga, Tl, Pb, Bi and compounds thereof.

130. (Currently amended) The method according to Claim [[126]] 163 wherein said metal-containing component is at least one selected from the group consisting of Tl, Pb, Bi and compounds thereof.

131. (Currently amended) The method according to Claim [[126]] 163 wherein said metal-containing component is at least one selected from the group consisting of Cr, Ni, Mo, Tc, Re and compounds thereof.

132. (Currently amended) The method according to Claim [[126]] 163 wherein said metal-containing component is at least one selected from the group consisting of Cr, Ni and compounds thereof.

133. (Currently amended) The method according to Claim [[126]] 163 wherein said metal-containing component is at least one selected from the group consisting of Sc, Y, Zr, Hf, V and compounds thereof.

134. (Currently amended) The method according to Claim [[126]] 163 wherein said metal-containing component is at least one selected from the group consisting of Ru, Rh, Pd, Os, Ir, Pt and compounds thereof.

135. (Currently amended) The method according to Claim [[126]] 163 wherein said metal-containing component is at least one selected from the group consisting of Ru, Pd and compounds thereof.
136. (Currently amended) The method according to Claim [[126]] 163 wherein said metal-containing component is at least one selected from the group consisting of Cu, Ag, Au, Cd, Hg and compounds thereof.
137. (Currently amended) The method according to Claim [[126]] 163 wherein said metal-containing component is at least one selected from the group consisting of lanthanide metals and compounds thereof.
138. (Currently amended) The method according to Claim [[126]] 163 wherein said metal-containing component is at least one selected from the group consisting of In and a compound thereof.
139. (Currently amended) The method according to Claim [[126]] 163 wherein said metal-containing component is at least one selected from the group consisting of Mn, Co, Zn and compounds thereof.
140. (Currently amended) The method according to Claim [[126]] 163 wherein said metal-containing component is at least one selected from the group consisting of Fe, Nb, Ta, W and compounds thereof.
141. (Currently amended) The method according to Claim [[126]] 163 wherein said metal-containing component is at least one selected from the group consisting of Fe and a compound thereof.
142. (Currently amended) The method according to Claim [[126]] 163 wherein the at least one moiety represented by Formula 2 is at least one moiety represented by Formula 4:
- (Formula 4)



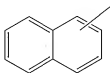
wherein Ar represents an aryl group, each of X^1 , X^2 and X^3 independently represents hydrogen, a hydrocarbyl group, an acyl group, a sulfonyl-containing group, a phosphoryl-containing group or an ether-group-containing hydrocarbyl group.

143. (Previously presented) The method according to Claim 142 wherein Ar is selected from the group consisting of moieties represented by Formulae 5 to 12:

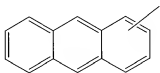
(Formula 5)



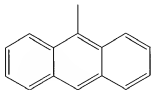
(Formula 6)



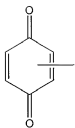
(Formula 7)



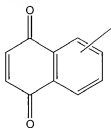
(Formula 8)



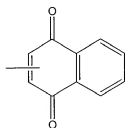
(Formula 9)



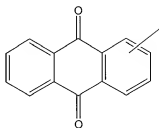
(Formula 10)



(Formula 11)

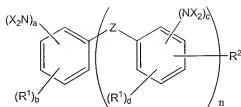


(Formula 12)



144. (Previously presented) The method according to Claim 142 wherein the compound containing the at least one moiety represented by said Formula 4 is a linear compound of Formula 14 and derivatives thereof:

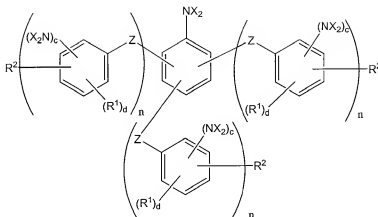
(Formula 14)



wherein each R^1 is the same or different and represents a C_1 - C_{20} hydrocarbyl group, a hydroxyl group- or halogen group-carrying C_1 - C_{20} hydrocarbyl group, a halogen group, a carboxyl group or its ester, a formyl group, an acyl group, a group represented by (acyl)-O-, an amino group, a mono- or dialkylamino group, an amide group or its substituted form, a hydroxyl group, an alkoxyl group, an alkylthio group, a sulfonyl-containing group, a phosphoryl-containing group, a nitro group, a cyano group or a thiocyno group, each R^2 is the same or different and represents hydrogen, a C_1 - C_{20} hydrocarbyl group, a hydroxyl group- or halogen group-carrying C_1 - C_{20} hydrocarbyl group, a halogen group, a carboxyl group or its ester, a formyl group, an acyl group, a group represented by (acyl)-O-, an amino group, a mono- or dialkylamino group, an amide group or its substituted form, a hydroxyl group, an alkoxyl group, an alkylthio group, a sulfonyl-containing group, a phosphoryl-containing group, a nitro group, a cyano group or a thiocyno group, each X is the same or different and represents hydrogen, a C_1 - C_{20} hydrocarbyl group, a hydroxyl group- or halogen group-carrying C_1 - C_{20} hydrocarbyl group, an acyl group, a sulfonyl-containing group, a phosphoryl-containing group or an ether-group-containing hydrocarbyl group, each Z is the same or different and represents a direct bond, a C_1 - C_{10} alkylene group, -(alkylene)-O-, -(alkylene)-S-, -O-, -S-, -SO₂-, -CO- or -COO-, n represents an integer of 1 to 100, each of a and c is an integer of 1 to 3, each of b and d is 0 or an integer of 1 to 3, provided that $1 \leq a+b \leq 5$, $1 \leq c+d \leq 4$, and each d is the same or different, and derivatives thereof.

145. (Previously presented) The method according to Claim 142 wherein the compound containing the at least one moiety represented by said Formula 4 is a branched linear compound represented by Formula 16 and derivatives thereof:

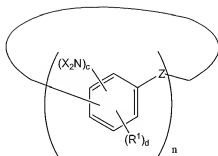
(Formula 16)



wherein each R^1 is the same or different and represents a C_1 - C_{20} hydrocarbyl group, a hydroxyl group- or halogen group-carrying C_1 - C_{20} hydrocarbyl group, a halogen group, a carboxyl group or its ester, a formyl group, an acyl group, a group represented by (acyl)-O-, an amino group, a mono- or dialkylamino group, an amide group or its substituted form, a hydroxyl group, an alkoxy group, an alkylthio group, a sulfonyl-containing group, a phosphoryl-containing group, a nitro group, a cyano group or a thiocyanate group, each R^2 is the same or different and represents hydrogen, a C_1 - C_{20} hydrocarbyl group, a hydroxyl group- or halogen group-carrying C_1 - C_{20} hydrocarbyl group, a halogen group, a carboxyl group or its ester, a formyl group, an acyl group, a group represented by (acyl)-O-, an amino group, a mono- or dialkylamino group, an amide group or its substituted form, a hydroxyl group, an alkoxy group, an alkylthio group, a sulfonyl-containing group, a phosphoryl-containing group, a nitro group, a cyano group or a thiocyanate group, each X is the same or different and represents hydrogen, a C_1 - C_{20} hydrocarbyl group, a hydroxyl group- or halogen group-carrying C_1 - C_{20} hydrocarbyl group, an acyl group, a sulfonyl-containing group, a phosphoryl-containing group or an ether-group-containing hydrocarbyl group, each Z is the same or different and represents a direct bond, a C_1 - C_{10} alkylene group, - (alkylene)-O-, - (alkylene) S-, -O-, -S-, -SO₂-, -CO- or -COO-, each n is the same or different and represents an integer of 1 to 100, each c is the same or different and represents an integer of 1 to 3, each d is the same or different and represents 0 or an integer of 1 to 3, provided that $1 \leq c+d \leq 4$, and derivatives thereof.

146. (Previously presented) The method according to Claim 142 wherein the compound containing the at least one moiety represented by said Formula 4 is a cyclic compound represented by Formula 18 and derivatives thereof:

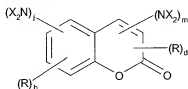
(Formula 18)



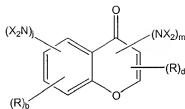
wherein each R^1 is the same or different and represents a C_1 - C_{20} hydrocarbyl group, a hydroxyl group- or halogen group-carrying C_1 - C_{20} hydrocarbyl group, a halogen group, a carboxyl group or its ester, a formyl group, an acyl group, a group represented by (acyl)-O-, an amino group, a mono- or dialkylamino group, an amide group or its substituted form, a hydroxyl group, an alkoxy group, an alkylthio group, a sulfonyl-containing group, a phosphoryl-containing group, a nitro group, a cyano group or a thiocyno group, each X is the same or different and represents hydrogen, a C_1 - C_{20} hydrocarbyl group, a hydroxyl group- or halogen group-carrying C_1 - C_{20} hydrocarbyl group, an acyl group, a sulfonyl-containing group, a phosphoryl-containing group or an ether-group-containing hydrocarbyl group, each Z is the same or different and represents a direct bond, a C_1 - C_{10} alkylene group, -(alkylene)-O-, -(alkylene)-S-, -O-, -S-, -SO₂-, -CO- or -COO-, n represents an integer of 1 to 100, c represents an integer of 1 to 3, d represents 0 or an integer of 1 to 3, provided that $1 \leq c+d \leq 4$, and each d is the same or different, and derivatives thereof.

147. (Previously presented) The method according to Claim 142 wherein the compound containing the at least one moiety represented by said Formula 4 is a compound selected from the group consisting of a coumarine derivative represented by Formula 20 and a chromone derivative represented by Formula 22:

(Formula 20)



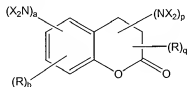
(Formula 22)



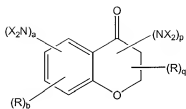
wherein each R is the same or different and represents a C₁-C₂₀ hydrocarbaryl group, a hydroxyl group- or halogen group-carrying C₁-C₂₀ hydrocarbaryl group, a halogen group, a carboxyl group or its ester, a formyl group, an acyl group, a group represented by (acyl)-O-, an amino group, a mono- or dialkylamino group, an amide group or its substituted form, a hydroxyl group, an alkoxyl group, an alkylthio group, a sulfonyl-containing group, a phosphoryl-containing group, a nitro group, a cyano group or a thiocyno group, each X is the same or different and represents hydrogen, a C₁-C₂₀ hydrocarbaryl group, a hydroxyl group- or halogen group-carrying C₁-C₂₀ hydrocarbaryl group, an acyl group, a sulfonyl-containing group, a phosphoryl-containing group or an ether-group-containing hydrocarbaryl group, each of j and b is 0 or an integer of 1 to 3, each of m and d is 0 or an integer of 1 to 2, provided that $0 \leq j+b \leq 4$, $0 \leq m+d \leq 2$ and $1 \leq j+m \leq 5$, and derivatives thereof.

148. (Previously presented) The method according to Claim 142 wherein the compound containing the at least one moiety represented by said Formula 4 is a compound selected from the group consisting of a dihydrocoumarine derivative represented by Formula 24, a chromanone derivative represented by Formula 26, and an isochromanone derivative represented by Formula 28:

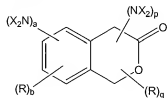
(Formula 24)



(Formula 26)



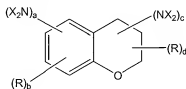
(Formula 28)



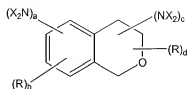
wherein each R is the same or different and represents a C₁-C₂₀ hydrocarbyl group, a hydroxyl group- or halogen group-carrying C₁-C₂₀ hydrocarbyl group, a halogen group, a carboxyl group or its ester, a formyl group, an acyl group, a group represented by (acyl)-O-, an amino group, a mono- or dialkylamino group, an amide group or its substituted form, a hydroxyl group, an alkoxyl group, an alkylthio group, a sulfonyl-containing group, a phosphoryl-containing group, a nitro group, a cyano group or a thiocyno group, each X is the same or different and represents hydrogen, a C₁-C₂₀ hydrocarbyl group, a hydroxyl group- or halogen group-carrying C₁-C₂₀ hydrocarbyl group, an acyl group, a sulfonyl-containing group, a phosphoryl-containing group or an ether-group-containing hydrocarbyl group, a is an integer of 1 to 3, b is 0 or an integer of 1 to 3, and each of p and q is 0 or an integer of 1 to 2, provided that 1 ≤ a+b ≤ 4 and 0 ≤ p+q ≤ 2, and derivatives thereof.

149. (Previously presented) The method according to Claim 142 wherein the compound containing the at least one moiety represented by said Formula 4 is a compound selected from the group consisting of a chroman derivative represented by Formula 30 and an isochroman derivative represented by Formula 32:

(Formula 30)



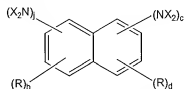
(Formula 32)



wherein each R is the same or different and represents a C₁-C₂₀ hydrocarbyl group, a hydroxyl group- or halogen group-carrying C₁-C₂₀ hydrocarbyl group, a halogen group, a carboxyl group or its ester, a formyl group, an acyl group, a group represented by (acyl)-O-, an amino group, a mono- or dialkylamino group, an amide group or its substituted form, a hydroxyl group, an alkoxyl group, an alkylthio group, a sulfonyl-containing group, a phosphoryl-containing group, a nitro group, a cyano group or a thiocyno group, each X is the same or different and represents hydrogen, a C₁-C₂₀ hydrocarbyl group, a hydroxyl group- or halogen group-carrying C₁-C₂₀ hydrocarbyl group, an acyl group, a sulfonyl-containing group, a phosphoryl-containing group or an ether-group-containing hydrocarbyl group, a is an integer of 1 to 3, b is 0 or an integer of 1 to 3, each of c and d is 0 or an integer of 1 to 3, provided that 1 ≤ a+b ≤ 4 and 0 ≤ c+d ≤ 3, and derivatives thereof.

150. (Previously presented) The method according to Claim 142 wherein the compound containing the at least one moiety represented by said Formula 4 is a compound selected from the group consisting of a naphthalene derivative represented by Formula 34 and a bisnaphthyl derivative represented by Formula 36:

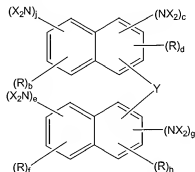
(Formula 34)



wherein each R is the same or different and represents a C₁-C₂₀ hydrocarbyl group, a hydroxyl group- or halogen group-carrying C₁-C₂₀ hydrocarbyl group, a halogen group, a carboxyl group or its ester, a formyl group, an acyl group, a group represented by (acyl)-O-, an amino group, a mono- or dialkylamino group, an amide group or its substituted form, a hydroxyl group, an alkoxyl group, an alkylthio group, a sulfonyl-containing group, a phosphoryl-containing group, a

nitro group, a cyano group or a thiocyno group, each X is the same or different and represents hydrogen, a C₁-C₂₀ hydrocarbonyl group, a hydroxyl group- or halogen group-carrying C₁-C₂₀ hydrocarbonyl group, an acyl group, a sulfonyl-containing group, a phosphoryl-containing group or an ether-group-containing hydrocarbonyl group, each of j, b, c and d is 0 or an integer of 1 to 3, provided that $0 \leq j+b \leq 4$, $0 \leq c+d \leq 4$ and $1 \leq j+c \leq 6$,

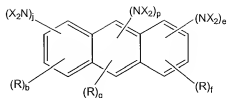
(Formula 36)



wherein each R is the same or different and represents a C₁-C₂₀ hydrocarbonyl group, a hydroxyl group- or halogen group-carrying C₁-C₂₀ hydrocarbonyl group, a halogen group, a carboxyl group or its ester, a formyl group, an acyl group, a group represented by (acyl)-O-, an amino group, a mono- or dialkylamino group, an amide group or its substituted form, a hydroxyl group, an alkoxy group, an alkylthio group, a sulfonyl-containing group, a phosphoryl-containing group, a nitro group, a cyano group or a thiocyno group, each X is the same or different and represents hydrogen, a C₁-C₂₀ hydrocarbonyl group, a hydroxyl group- or halogen group-carrying C₁-C₂₀ hydrocarbonyl group, an acyl group, a sulfonyl-containing group, a phosphoryl-containing group or an ether-group-containing hydrocarbonyl group, Z represents a direct bond, a C₁-C₁₀ alkylene group, -(alkylene)-O-, -(alkylene)-S-, -O-, -S-, -SO₂-, -CO- or -COO-, each of j, b, c, d, e, f, g and h is 0 or an integer of 1 to 3, provided that $0 \leq j+b \leq 4$, $0 \leq c+d \leq 3$, $0 \leq e+f \leq 4$, $0 \leq g+h \leq 3$ and $1 \leq j+c+e+g \leq 12$, and derivatives thereof.

151. (Previously presented) The method according to Claim 142 wherein the compound containing the at least one moiety represented by said Formula 4 is an anthracene derivative represented by Formula 38:

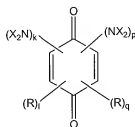
(Formula 38)



wherein each R is the same or different and represents a C₁-C₂₀ hydrocarbyl group, a hydroxyl group- or halogen group-carrying C₁-C₂₀ hydrocarbyl group, a halogen group, a carboxyl group or its ester, a formyl group, an acyl group, a group represented by (acyl)-O-, an amino group, a mono- or dialkylamino group, an amide group or its substituted form, a hydroxyl group, an alkoxyl group, an alkylthio group, a sulfonyl-containing group, a phosphoryl-containing group, a nitro group, a cyano group or a thiocyno group, each X is the same or different and represents hydrogen, a C₁-C₂₀ hydrocarbyl group, a hydroxyl group- or halogen group-carrying C₁-C₂₀ hydrocarbyl group, an acyl group, a sulfonyl-containing group, a phosphoryl-containing group or an ether-group-containing hydrocarbyl group, each of j, b, e and f is 0 or an integer of 1 to 3, each of p and q is 0 or an integer of 1 to 2, provided that $0 \leq j+b \leq 4$, $0 \leq p+q \leq 2$, $0 \leq e+f \leq 4$ and $1 \leq j+p+e \leq 8$.

152. (Previously presented) The method according to Claim 142 wherein the compound containing the at least one moiety represented by said Formula 4 is a benzoquinone derivative represented by Formula 40:

(Formula 40)

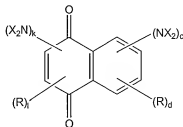


wherein each R is the same or different and represents a C₁-C₂₀ hydrocarbyl group, a hydroxyl group- or halogen group-carrying C₁-C₂₀ hydrocarbyl group, a halogen group, a carboxyl group or its ester, a formyl group, an acyl group, a group represented by (acyl)-O-, an amino group, a mono- or dialkylamino group, an amide group or its substituted form, a hydroxyl group, an alkoxyl group, an alkylthio group, a sulfonyl-containing group, a phosphoryl-containing group, a nitro group, a cyano group or a thiocyno group, each X is the same or different and represents

hydrogen, a C_1 - C_{20} hydrocarbyl group, a hydroxyl group- or halogen group-carrying C_1 - C_{20} hydrocarbyl group, an acyl group, a sulfonyl-containing group, a phosphoryl-containing group or an ether-group-containing hydrocarbyl group, each of k , l , p and q is 0 or an integer of 1 to 2, provided that $0 \leq k+l \leq 2$, $0 \leq p+q \leq 2$ and $1 \leq k+p \leq 4$.

153. (Previously presented) The method according to Claim 142 wherein the compound containing the at least one moiety represented by said Formula 4 is a naphthoquinone derivative represented by Formula 42:

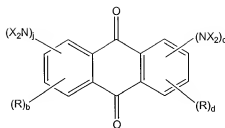
(Formula 42)



wherein each R is the same or different and represents a C_1 - C_{20} hydrocarbyl group, a hydroxyl group- or halogen group-carrying C_1 - C_{20} hydrocarbyl group, a halogen group, a carboxyl group or its ester, a formyl group, an acyl group, a group represented by (acyl)-O-, an amino group, a mono- or dialkylamino group, an amide group or its substituted form, a hydroxyl group, an alkoxy group, an alkylthio group, a sulfonyl-containing group, a phosphoryl-containing group, a nitro group, a cyano group or a thiocyno group, each X is the same or different and represents hydrogen, a C_1 - C_{20} hydrocarbyl group, a hydroxyl group- or halogen group-carrying C_1 - C_{20} hydrocarbyl group, an acyl group, a sulfonyl-containing group, a phosphoryl-containing group or an ether-group-containing hydrocarbyl group, each of k and l is 0 or an integer of 1 to 2, each of c and d is 0 or an integer of 1 to 3, provided that $0 \leq k+l \leq 2$, $0 \leq c+d \leq 4$ and $1 \leq k+c \leq 5$.

154. (Previously presented) The method according to Claim 142 wherein the compound containing the at least one moiety represented by said Formula 4 is an anthraquinone derivative represented by Formula 44:

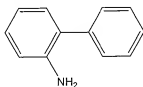
(Formula 44)



wherein each R is the same or different and represents a C₁-C₂₀ hydrocarbyl group, a hydroxyl group- or halogen group-carrying C₁-C₂₀ hydrocarbyl group, a halogen group, a carboxyl group or its ester, a formyl group, an acyl group, a group represented by (acyl)-O-, an amino group, a mono- or dialkylamino group, an amide group or its substituted form, a hydroxyl group, an alkoxyl group, an alkylthio group, a sulfonyl-containing group, a phosphoryl-containing group, a nitro group, a cyano group or a thiocyno group, each X is the same or different and represents hydrogen, a C₁-C₂₀ hydrocarbyl group, a hydroxyl group- or halogen group-carrying C₁-C₂₀ hydrocarbyl group, an acyl group, a sulfonyl-containing group, a phosphoryl-containing group or an ether-group-containing hydrocarbyl group, each of j, b, c and d is 0 or an integer of 1 to 3, provided that $0 \leq j+b \leq 4$, $0 \leq c+d \leq 4$ and $1 \leq j+c \leq 6$.

155. (Currently amended) The method according to Claim [[94]] 142 wherein the compound containing the at least one moiety represented by said Formula 4 is 2-aminobiphenyl represented by Formula 46:

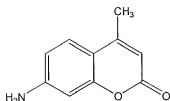
(Formula 46)



and derivatives thereof.

156. (Previously presented) The method according to Claim 142 wherein the compound containing the at least one moiety represented by said Formula 4 is 7-amino-4-methylcoumarine represented by Formula 59:

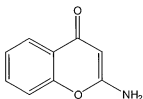
(Formula 59)



and derivatives thereof.

157. (Previously presented) The method according to Claim 142 wherein the compound containing the at least one moiety represented by said Formula 4 is 2-aminochromone represented by Formula 62:

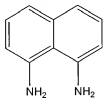
(Formula 62)



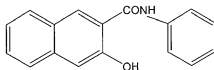
and derivatives thereof.

158. (Previously presented) The method according to Claim 142 wherein the compound containing the at least one moiety represented by said Formula 4 is a compound selected from the group consisting of 1,8-diaminonaphthalene represented by Formula 66, naphthol AS represented by Formula 67, and 1,1'-binaphthyl-2,2'-diamine represented by Formula 69:

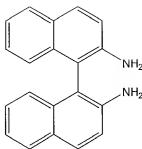
(Formula 66)



(Formula 67)



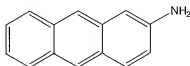
(Formula 69)



and derivatives thereof.

159. (Previously presented) The method according to Claim 142 wherein the compound containing the at least one moiety represented by said Formula 4 is 2-aminoanthracene represented by Formula 72:

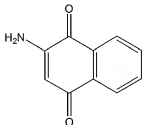
(Formula 72)



and derivatives thereof.

160. (Previously presented) The method according to Claim 142 wherein the compound containing the at least one moiety represented by said Formula 4 is 2-aminonaphthoquinone represented by Formula 75:

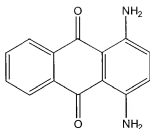
(Formula 75)



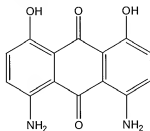
and derivatives thereof.

161. (Previously presented) The method according to Claim 142 wherein the compound containing the at least one moiety represented by said Formula 4 is a compound selected from the group consisting of 1,4-diaminoanthraquinone represented by Formula 81, 1,8-diamino-4,5-dihydroxyanthraquinone represented by Formula 82 and acid blue 25 represented by Formula 83:

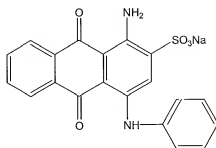
(Formula 81)



(Formula 82)



(Formula 83)



and derivatives thereof.

162. (Currently amended) ~~The method according to claim 125;~~ A method of producing a polyester comprising:

contacting an acid component and an alcohol component in the presence of a catalyst,
the polyester having a glycol component consisting mainly of at least one of ethylene
glycol, 1,3-propanediol, 1,4-butanediol, and 1,4-cyclohexane dimethanol,

the catalyst comprising

at least one metal-containing component having substantially no catalytic activity for a
polyester polymerization, selected from the group consisting of metals and metal compounds,
wherein said metal-containing component comprises no antimony or germanium; and

an organic compound component having substantially no catalytic activity for a polyester polymerization, wherein said organic compound component is at least one compound containing at least one moiety represented by Formula 1:

(Formula 1)

Ar-O-

wherein Ar represents an aryl group,

wherein the metal containing component and the organic compound component are added separately,

wherein the activity parameter of the catalyst is less than 2 times the activity parameter observed when using antimony trioxide as a catalyst in the polymerization of polyethylene terephthalate,

wherein the activity parameter of the catalyst, AP, fulfills the formula

$$\text{AP} < 2\text{T}$$

wherein AP is the amount of time required for a polymerization using the catalyst conducted at 275°C under reduced pressure of 0.1 Torr to obtain a polyethylene terephthalate whose intrinsic viscosity is 0.5 dl/g, and

wherein T is an AP observed when using antimony trioxide as a catalyst at a level of 0.05 mol% as antimony atom based on an acid component in a resultant polyethylene terephthalate,

wherein TD < 25%, wherein TD is the percent reduction in the intrinsic viscosity after keeping 1 gram of a polymerized polyethylene terephthalate in a melted state in a glass tube under a nitrogen atmosphere at 300°C for 2 hours, wherein prior to testing in the glass tube, the polymerized polyethylene terephthalate having an initial intrinsic viscosity of 0.6 dl/g is dried at 130°C for 12 hours in vacuum.

163. (Currently amended) ~~The method according to claim 126;~~ A method of producing a polyester comprising:

contacting an acid component and an alcohol component in the presence of a catalyst, the polyester having a glycol component consisting mainly of at least one of ethylene glycol, 1,3-propanediol, 1,4-butanediol, and 1,4-cyclohexane dimethanol,

the catalyst comprising

at least one metal-containing component having substantially no catalytic activity for a polyester polymerization, selected from the group consisting of metals and metal compounds, wherein said metal-containing component comprises no antimony or germanium; and
an organic compound component having substantially no catalytic activity for a polyester polymerization, wherein said organic compound component is at least one compound containing at least one moiety represented by Formula 2:

(Formula 2)

Ar-N <

wherein Ar represents an aryl group, and wherein the metal containing component and the organic compound component are added separately,

wherein TD < 25%, wherein TD is the percent reduction in the intrinsic viscosity after keeping 1 gram of a polymerized polyethylene terephthalate in a melted state in a glass tube under a nitrogen atmosphere at 300°C for 2 hours, wherein prior to testing in the glass tube, the polymerized polyethylene terephthalate having an initial intrinsic viscosity of 0.6 dl/g is dried at 130°C for 12 hours in vacuum.

164. (Currently amended) ~~The method according to claim 125,~~ A method of producing a polyester comprising:

contacting an acid component and an alcohol component in the presence of a catalyst, the polyester having a glycol component consisting mainly of at least one of ethylene glycol, 1,3-propanediol, 1,4-butanediol, and 1,4-cyclohexane dimethanol,

the catalyst comprising

at least one metal-containing component having substantially no catalytic activity for a polyester polymerization, selected from the group consisting of metals and metal compounds, wherein said metal-containing component comprises no antimony or germanium; and
an organic compound component having substantially no catalytic activity for a polyester polymerization, wherein said organic compound component is at least one compound containing at least one moiety represented by Formula 1:

(Formula 1)

Ar-O-

wherein Ar represents an aryl group,

wherein the metal containing component and the organic compound component are added separately,

wherein the activity parameter of the catalyst is less than 2 times the activity parameter observed when using antimony trioxide as a catalyst in the polymerization of polyethylene terephthalate,

wherein the activity parameter of the catalyst, AP, fulfills the formula

$$AP < 2T$$

wherein AP is the amount of time required for a polymerization using the catalyst conducted at 275°C under reduced pressure of 0.1 Torr to obtain a polyethylene terephthalate whose intrinsic viscosity is 0.5 dl/g, and

wherein T is an AP observed when using antimony trioxide as a catalyst at a level of 0.05 mol% as antimony atom based on an acid component in a resultant polyethylene terephthalate,

wherein the catalyst is contacted with the acid component and the alcohol component by adding the catalyst as a powder, as neat, or as a slurry.

165. (Currently amended) ~~The method according to claim 126;~~ A method of producing a polyester comprising:

contacting an acid component and an alcohol component in the presence of a catalyst, the polyester having a glycol component consisting mainly of at least one of ethylene glycol, 1,3-propanediol, 1,4-butanediol, and 1,4-cyclohexane dimethanol,

the catalyst comprising

at least one metal-containing component having substantially no catalytic activity for a polyester polymerization, selected from the group consisting of metals and metal compounds, wherein said metal-containing component comprises no antimony or germanium; and

an organic compound component having substantially no catalytic activity for a polyester polymerization, wherein said organic compound component is at least one compound containing at least one moiety represented by Formula 2:

(Formula 2)

Ar-N <

wherein Ar represents an aryl group, and wherein the metal containing component and the organic compound component are added separately,

wherein the catalyst is contacted with the acid component and the alcohol component by adding the catalyst as a powder, as neat, or as a slurry.

166. (Currently amended) ~~The method according to claim 126;~~ A method of producing a polyester comprising:

contacting an acid component and an alcohol component in the presence of a catalyst, the polyester having a glycol component consisting mainly of at least one of ethylene glycol, 1,3-propanediol, 1,4-butanediol, and 1,4-cyclohexane dimethanol,

the catalyst comprising

at least one metal-containing component having substantially no catalytic activity for a polyester polymerization, selected from the group consisting of metals and metal compounds, wherein said metal-containing component comprises no antimony or germanium; and an organic compound component having substantially no catalytic activity for a polyester polymerization, wherein said organic compound component is at least one compound containing at least one moiety represented by Formula 2:

(Formula 2)

Ar-N <

wherein Ar represents an aryl group, and wherein the metal containing component and the organic compound component are added separately,

wherein the activity parameter of the catalyst is less than 2 times the activity parameter observed when using antimony trioxide as a catalyst in the polymerization of polyethylene terephthalate,

wherein the activity parameter of the catalyst, AP, fulfills the formula

$$AP < 2T$$

wherein AP is the amount of time required for a polymerization using the catalyst conducted at 275°C under reduced pressure of 0.1 Torr to obtain a polyethylene terephthalate whose intrinsic viscosity is 0.5 dl/g, and

wherein T is an AP observed when using antimony trioxide as a catalyst at a level of 0.05 mol% as antimony atom based on an acid component in a resultant polyethylene terephthalate.